

**WHAT IS CLAIMED IS:**

1. An image misconvergence correction apparatus, comprising:

a correction value generation unit for calculating a convergence correction value to correct misconvergence occurring when a video signal is scanned on a display device;

an amplification unit for performing a D-class amplification with respect to the convergence correction value;

a convergence yoke mounted in the display device to control a path of an electron beam corresponding to the video signal based on the convergence correction value amplified in the amplification unit; and

a feedback sensing unit for differentially amplifying a voltage value for electric current passing through the convergence yoke, and feeding back the differentially amplified voltage value to the correction value generation unit.

2. The image misconvergence correction apparatus as claimed in claim 1, wherein the correction value generation unit includes:

a convergence module for outputting a pre-set misconvergence value;

a triangular waveform generation unit for generating a triangular waveform based on a pre-set frequency;

a combining unit for combining the misconvergence value and an output voltage of the feedback sensing unit;

a comparison unit for comparing potential levels of voltages outputted from the combining unit and the triangular waveform generation unit; and

a pulse generation unit for generating a pulse width-modulated signal based on a comparison result of the comparison unit.

3. The image misconvergence correction apparatus as claimed in claim 2, wherein the convergence module is synchronized with horizontal and vertical synchronous signals applied to the display device, and outputs the misconvergence value, and the outputted misconvergence value is set by predicting misconvergence values of the display device.

4. The image misconvergence correction apparatus as claimed in claim 3, wherein the feedback sensing unit includes:

a first resistor and a second resistor connected in series between the convergence yoke and a ground terminal;

a third resistor being inputted with a voltage induced at one end of the first resistor;

a fourth resistor being inputted with a voltage induced at the other end of the first resistor;

an operational amplifier being inputted with an output voltage from the second resistor as a positive input, while being inputted with an output voltage from the third resistor as a negative input;

a fifth resistor connected between the negative input terminal and a ground terminal of the operational amplifier; and

a sixth resistor connected between the positive input terminal and an output terminal of the operational amplifier.

5. The image misconvergence correction apparatus as claimed in claim 4, wherein the convergence yoke has a damping resistor for forming a loop-shaped current path together with both ends of the convergence yoke and electrically discharging the convergence yoke.

6. The image misconvergence correction apparatus as claimed in claim 5, wherein the convergence correction value is in pulse width-modulated waveform.

7. The image misconvergence correction apparatus as claimed in claim 6, wherein the misconvergence value has pre-set frequency and amplitude, and is any of sinusoidal waveform, square waveform, triangular

waveform, rectangular waveform, saw-teeth waveform, and parabolic waveform.

8. The image misconvergence correction apparatus as claimed in claim 7, further comprising a low-pass filter provided between the amplification unit and the convergence yoke, and for filtering and outputting the convergence correction value amplified in the amplification unit.

9. An image misconvergence correction method, comprising steps of:

calculating a convergence correction value of a pulse to correct a misconvergence value of a video signal outputted from a display device;

performing D-class amplification with respect to the convergence correction value to amplify voltages and currents;

controlling a path of an electron beam corresponding to the video signal by a magnetic field formed according to a current based on the D-class-amplified convergence correction value; and

calculating a voltage value for a noise-removed current, and feeding back to the step for calculating the convergence correction value.

10. The image misconvergence correction method as claimed in claim 9, wherein the step for controlling the electron beam path further includes a step for removing noise with respect to the current forming the magnetic field.

11. The image misconvergence correction method as claimed in claim 10, wherein the feedback step includes steps of:

calculating voltages for the current forming the magnetic field;

amplifying the voltages and obtaining a differential voltage of the voltages; and

amplifying the differential voltage and generating a predetermined voltage value.

12. The image misconvergence correction method as claimed in claim 10, wherein the step for calculating the convergence correction value includes steps of:

inputting the misconvergence value;

generating a triangular waveform of a set frequency;

comparing potential levels of the misconvergence value and the triangular waveform; and

generating a pulse width-modulated signal based on a result of the comparison.

13. The image misconvergence correction method as claimed in claim 12, wherein the step for calculating the convergence correction value further includes steps of:

inputting the fed-back voltage value; and

combining the triangular waveform and the fed-back voltage value.

14. The image misconvergence correction method as claimed in claim 13, wherein the step for performing the D-class amplification further includes a step for low-pass-filtering the amplified convergence correction value.